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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,961	10/28/2003	Martin Jutras	2993-409US SC/ip	4574
32292	7590	03/13/2006	EXAMINER	
OGILVY RENAULT LLP (PWC) 1981 MCGILL COLLEGE AVENUE SUITE 1600 MONTREAL, QC H3A 2Y3 CANADA			VERDIER, CHRISTOPHER M	
			ART UNIT	PAPER NUMBER
			3745	
DATE MAILED: 03/13/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/693,961	<b>Applicant(s)</b> JUTRAS, MARTIN	
	<b>Examiner</b> Christopher Verdier	<b>Art Unit</b> 3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-3,6,17-19 and 21-28 is/are allowed.
- 6) ☒ Claim(s) 4,5,8,11,13-16 and 20 is/are rejected.
- 7) ☒ Claim(s) 7,9,10 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10-28-03, 1-10-06 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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Applicant's amendment dated January 10, 2006 has been carefully considered but is non-persuasive. Claims 1-28 are pending. The Replacement Sheet of Drawings filed January 10, 2006 is accepted by the examiner and overcomes the objection to the drawings set forth in the first Office action. The specification has been amended to overcome the informalities set forth in the first Office action. The claims, with the exception of claim 7, which contains a clerical error, have been amended to overcome the informalities set forth in the first Office action. Claim 16 has been amended to no longer be a duplicate of claim 6. Correction of the above matters is noted with appreciation.

With regard to the rejection of claims 4-5, 8, 11, 14, and 20 under 35 U.S.C. 112, second paragraph, applicant has stated that the expression "wider at locations subject to higher operating temperatures" has been replaced by the expression -- wider at a location subject to a higher operating temperature --, in order to overcome the rejection. The examiner appreciates applicant's statement, but the copy of claims in this application indicates that these claims now read "wider at a locations subject to a higher operating temperatures", which is indefinite for the same reason set forth in the Office action. Perhaps applicant should consider using a larger font type since the amendment was submitted via fax, in order to improve the readability of the amendment.

Applicant has argued concerning the rejection of claims 13-15 under 35 U.S.C. 102(b) as being anticipated by Bowers 3,752,598 that confronting faces 42 are provided with grooves, and that the confronting faces are generally parallel to each other and the intersegment gap on the

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upstream side is equal to the intersegment gap on the downstream side of the shroud segments, that plate 50 is disposed within grooves 44 adjacent inner surfaces 46, and that a net force on the plate created by the difference in gas pressure in chamber 36 and in gas path 28 causes plate 50 to be pressed against the pair of mutually facing tapered surfaces 46. However, it is respectfully pointed out that Bowers is not applied against the claims reading the claim limitations on the various elements that are stated above. As set forth in the first Office action, figures 1-3 and 5 of Bowers disclose a gas turbine engine near 10 comprising an expansion joint having a first member 20, 20 and a second member 50, the first member being provided with confronting faces 46, 46 and the second member being provided with confronting faces 54, 55 defining a gap therebetween, the confronting faces being non-parallel at room temperature (figure 3) and substantially parallel under conditions of operating temperatures (figure 5), wherein at room temperature (as seen in figure 3), the gap is wider (than as seen in figure 5) at a location subject to higher operating temperatures (the upstream side near 30 in figure 1) during normal engine operation, with the first member being cut slantwise at one end thereof (the inside end of gap 40 that connects to portion 46 in figure 3) to form one of the confronting faces. With regard to Applicant's argument that the tapered surfaces 46 are used to promote a better fit with plate 50 and not for the correction of uneven thermal expansion, it is noted that the claims do not recite correction of uneven thermal expansion. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). With regard to Applicant's argument that there is no gap defined when plate 50 is pressed against the surfaces 46 under conditions of operating temperatures, the examiner disagrees because there is still a small gap near the

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innermost inclined surfaces 46 adjacent gap 40, between the plate 50 with its confronting faces 54, 55 and inclined surfaces 46. Additionally, claims 13 and 15 do not require that a gap be defined under conditions of operating temperatures. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. With regard to Applicant's argument that Bowers teaches a seal and does not teach an expansion joint, and that applicant believes it is unjust to consider a seal comprising a plate that can be bent to press up against another surface as an expansion joint, this argument is not persuasive. Plate 50 is clearly an element of the expansion joint, and column 3, lines 50-55 of Bowers explicitly states that gaps 40 between the shrouds 20 are provided to allow for thermal expansion, so it cannot be argued that Bowers does not teach an expansion joint. Again, the second member 50 is an element of the expansion joint between shrouds 20.

### ***Claim Objections***

Claims 7-12 are objected to because of the following informalities: Appropriate correction is required.

In claim 7, line 4, "and" should be deleted.

In claim 7, line 5, -- and -- should be inserted after "first".

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 4-5, 8, 11, 14, and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Each of these claims recites that the gap is “wider at a locations subject to a higher operating temperatures during normal engine operation.” The phrase “wider at a locations subject to a higher operating temperatures during normal engine operation” is inaccurate because each gap 29 can be wider only at a single location, as seen in figure 4A. Perhaps applicant intends to claim that the gap is wider at a location subject to a higher operating temperature during normal engine operation.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13-15 (as far as claim 14 is definite and understood) are rejected under 35 U.S.C. 102(b) as being anticipated by Bowers 3,752,598 (figures 1-3 and 5). Note the gas turbine engine near 10 comprising an expansion joint having a first member 20, 20 and a second member 50, the first member being provided with confronting faces 46, 46 and the second member being provided with confronting faces 54, 55 defining a gap therebetween, the confronting faces being non-parallel at room temperature (figure 3) and substantially parallel under conditions of operating temperatures (figure 5), wherein at room temperature (as seen in

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figure 3), the gap is wider (than as seen in figure 5) at a location subject to higher operating temperatures (the upstream side near 30 in figure 1) during normal engine operation, with the first member being cut slantwise at one end thereof (the inside end of gap 40 that connects to portion 46 in figure 3) to form one of the confronting faces.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-16 (as far as claim 14 is definite and understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwabara 6,270,311 in view of Bowers 3,752,598. Kuwabara (figures 8-10) discloses a gas turbine engine substantially as claimed, comprising an expansion joint having first and second members, 20 and 25, respectively, the first and second members being provided with confronting faces defining an unnumbered gap, with the first and second members respectively including first and second adjacent shroud segments 20, 20 of an annular shroud extending about an array of turbine blades 34, the gap being an intersegment gap.

However, Kuwabara does not disclose that the confronting faces are non-parallel at room temperature and substantially parallel under conditions of operating temperatures (claim 13), does not disclose that at room temperature, the gap is wider at a location subject to a higher

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operating temperature during normal engine operation than at a location subject to a lower operating temperature during normal engine operation (claim 14), and does not disclose that the first member is cut slantwise at one end thereof to form one of the confronting faces (claim 15).

Bowers (figures 1-3 and 5) shows a gas turbine engine near 10 comprising an expansion joint having a first member 20, 20 and a second member 50, the first member being provided with confronting faces 46, 46 and the second member being provided with confronting faces 54, 55 defining a gap therebetween, the confronting faces being non-parallel at room temperature (figure 3) and substantially parallel under conditions of operating temperatures (figure 5), wherein at room temperature (as seen in figure 3), the gap is wider (than as seen in figure 5) at a location subject to higher operating temperatures (the upstream side near 30 in figure 1) during normal engine operation, with the first member being cut slantwise at one end thereof (the inside end of gap 40 that connects to portion 46 in figure 3) to form one of the confronting faces. The arrangement is provided for the purpose of providing a thermal expansion joint with enhanced sealing at operating conditions.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the first and second members of Kuwabara such that the confronting faces are non-parallel at room temperature and substantially parallel under conditions of operating temperatures, such that at room temperature, the gap is wider at a location subject to a higher operating temperature during normal engine operation than at a location subject to a lower operating temperature during normal engine operation, and such that



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the first member is cut slantwise at one end thereof to form one of the confronting faces, by forming members 20 of Kuwabara to have the same confronting faces 46 and seal plate 50 as disclosed in figures 3 and 5 by Bowers, for the purpose of providing a thermal expansion joint with enhanced sealing at operating conditions. Although Bowers does not disclose that the joint is in adjacent shroud segments of an annular shroud extending about an array of turbine blades, the joint of Bowers is located in adjacent shroud segments of stator vanes 17 in a gas turbine engine, having generally the same structural and functional similarity to a segmented annular shroud extending about an array of turbine blades, and one of ordinary skill in the art would have recognized from the teachings of Bowers that the segmented expansion joint of Bowers may be applied to a segmented annular shroud extending about an array of turbine blades, due to the same general structural and functional similarity to a segmented annular shroud extending about an array of turbine blades.

***Allowable Subject Matter***

Claims 1-3, 6, 17-19, and 21-28 are allowed.

Claims 7, 9-10, and 12 contain allowable subject matter; Applicant should correct the informalities therein.

No meaningful determination may be made with regard to claims 4-5, 8, 11, and 20, due to the indefinite nature of the claims.

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

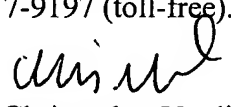
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Verdier whose telephone number is (571) 272-4824. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward K. Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.V.  
March 6, 2006

  
Christopher Verdier  
Primary Examiner  
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